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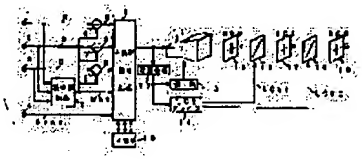
(54) FIELD SEQUENTIAL COLOR DISPLAY DEVICE AND ITS DRIVE CIRCUIT

(57)Abstract:
PURPOSE: To prevent color split in a field sequential color display.
CONSTITUTION: A minimum value is detected from digitized R, G, B signals (three primary colors) for every pixel (a sample) in a minimum value detection circuit 5, and the minimum value is supplied to a four-fold speed signal processing circuit 9 as a Wht signal (achromatic signal). By subtracting the minimum value detected from the R, G, B signals, R', G', B' signals (modified three primary colors signals) are generated, and the modified three primary colors signals are supplied to the four-fold speed signal processing circuit 9. In the four-fold speed signal processing circuit 9, time-division multiplex in which horizontal and vertical synchronizing signals are made four-fold, is performed. By turning on (0° rotation) and/or off (90° rotation) π cells 16, 18 based on the time-division multiplex signal, a color image of which one frame consists of four fields is obtained.



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CLAIMS

[Claim(s)]
[Claim 1] With a color generation means to generate a three-primary-colors signal and an achromatic color signal, and the generated above-mentioned three-primary-colors signal and achromatic color signal, from the three-primary-colors signal inputted as the monochrome image display means It is switched by the signal from the driving means which carries out the sequential drive of the above-mentioned monochrome image display means, and the outside which synchronizes with the drive of the generated above-mentioned three-primary-colors signal and an achromatic color signal. Junji Men color display equipment which consists of a color shutter allotted to the above-mentioned monochrome image display means and an optical-axis top serial.
[Claim 2] difference with the above-mentioned three-primary-colors signal into which the minimum value or the maximum out of the above-mentioned three-primary-colors signal into which the above-mentioned color generation means was inputted was detected, and was inputted in Junji Men color display equipment according to claim 1 as the above-mentioned achromatic color signal determined as the achromatic color signal decision means which makes the detected above-mentioned minimum value or the maximum an achromatic color signal -- the Junji Men color display equipment characterized by to make a value into a correction three-primary-colors signal.
[Claim 3] In Junji Men color display equipment according to claim 1 the above-mentioned color generation means The achromatic color signal decision means which the minimum value or maximum is detected out of the inputted above-mentioned three-primary-colors signal, and makes the detected above-mentioned minimum value or maximum an achromatic color signal, the difference of a means to perform profile emphasis processing to the above-mentioned achromatic color signal from the above-mentioned achromatic color signal decision means, and the above-mentioned three-primary-colors signal inputted as the above-mentioned achromatic color signal by which isolation emphasis was carried out -- the Junji Men color display equipment characterized by making a value into a correction three-primary-colors signal.
[Claim 4] Junji Men color display equipment characterized by the brightness / a motion detection means to detect the above-mentioned three-primary-colors signal intensity level and a motion, and performing the above-mentioned profile emphasis processing when the detected above-mentioned intensity level is large in Junji Men color display equipment according to claim 3.
[Claim 5] Junji Men color display equipment characterized by the above-mentioned motion level from the above-mentioned brightness / motion detection means having been still larger than the 1st threshold, and performing the above-mentioned profile emphasis processing in Junji Men color display equipment according to claim 4 when smaller than the 2nd threshold.
[Claim 6] The above-mentioned driving means is Junji Men color display equipment characterized by carrying out the sequential drive of the above-mentioned monochrome image display means for the above-mentioned three-primary-colors signal and achromatic color signal which were generated [in / on Junji Men color display equipment according to claim 1 and / the above-mentioned color generation means] 4X by carrying out Time Division Multiplexing.
[Claim 7] The step at which an achromatic color signal is detected from the inputted three-primary-colors signal, and the step by which a correction three-primary-colors signal is generated based on the detected above-mentioned achromatic color signal, The step by which the 4X Time-Division-Multiplexing signal of the above-mentioned achromatic color signal and the above-mentioned correction three-primary-colors signal is generated, The Junji Men drive approach of the color display equipment characterized by consisting of a step which drives the color shutter allotted to a monochrome image display means by which the field is switched based on the above-mentioned Time-Division-Multiplexing signal, and an optical-axis top serial.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to the Junji Men color display equipment and the drive approach of making color display possible by switching a three-primary-colors image for every field and every field for several sheets.
[0002]
[Description of the Prior Art] When incidence of the light of two or more colors is conventionally carried out to human being's eyes, it is mixed on a retina and perceived as a different color from the color by which incidence was carried out. This is called additive mixture of colors. The colored light which cannot be obtained using these additive mixture of colors is R (red), G (green), and B (blue) which are generally called three primary colors of light. It is used for radical Motohara ** of a color display, being able to obtain the colored light of arbitration and carrying out by the additive mixture of colors of these three independent colored light.
[0003] Generally, in a color display, color mixture, such as juxtaposition additive mixture of colors, continuation additive mixture of colors, and coincidence additive mixture of colors, is performed. It is the technique of additive mixture of colors in which the limitation of the resolution human being's eyes brings about any [these] technique. Generally above-mentioned continuation additive mixture of colors are called a field serial mode, and this field serial mode is mainly packed into two kinds of methods, a color shutter method and a back light method.
[0004] Here, drawing 6 shows the block diagram of the conventional example of the color display of the field serial mode which used the color shutter method. Moreover, drawing 7 shows an example of the signal wave form of each part of the block diagram shown in drawing 6 . R signal separated from the compound color video signal shown in drawing 7 A from an input terminal 61 is supplied, same G signal is supplied from an input terminal 62, same B signal is supplied from an input terminal 63, and a synchronizing signal Sync is further supplied from an input terminal 64. In addition, in drawing 7 A, since it is easy, illustration of a carrier chrominance signal is omitted. Such R and G, and B signal are digitized by the A/D converter which is not illustrated.
[0005] Each signal supplied from input terminals 61-64 is supplied to the 3X digital disposal circuit 65. The 3X digital disposal circuit 65 has a field memory 66, compresses the time-axis of each signal to one third, and carries out Time Division Multiplexing of the compression three-primary-colors signal. That is, the 3X signal shown in drawing 7 B occurs from the 3X digital disposal circuit 65. This 3X signal is supplied to the CRT (Cathode Ray Tube) display 67 and a synchronizing separator circuit 68. In a synchronizing separator circuit 68, the synchronizing signal separated from the supplied 3X signal is supplied to a deflection circuit 69 and the LCS (Liquid Crystal Switch) drive circuit 70.
[0006] In a deflection circuit 69, based on the supplied synchronizing signal, the deviation of CRT display 67 is performed and an image is displayed with CRT display 67. Each of a horizontal and a vertical deflection frequency is made into 3 times of the usual thing, and a sequential indication of the image by R signal, G signal, and B signal is given [in 1 field]. In the LCS drive circuit 70, the pi cel 72 and the timing of a drive of 74 are generated using the supplied synchronizing signal.
[0007] The drive pulse LCS 1 from the LCS drive circuit 70 is supplied to the pi cel 72, and the drive pulse LCS 2 is supplied to the pi cel 74. In this conventional example, the configuration of the color polarizing plates 71, 73, and 75 of three sheets and the pi cels 72 and 74 of two sheets gives an indication from CRT display 67 the color display of a field serial mode. Drawing 7 C shows the timing chart of the drive pulse LCS 1, and drawing 7 D shows the timing chart of the drive pulse LCS 2. Here, the pi cels 72 and 74 rotate 0 degree of incident light in ON condition, namely, output it with the condition of incident light, and in an OFF condition, 90 degrees rotates and they output incident light.
[0008] From this, when the drive pulses LCS 1 are [ON and the drive pulse LCS 2] ON, G image is displayed, when the drive pulses LCS 1 are [ON and the drive pulse LCS 2] OFF, R image is displayed, and when the drive pulses LCS 1 are OFF and the drive pulse LCS 2] ON, B image is displayed. That is, a full color image copies out by repeating and displaying this R and G, and B image.
[0009] Moreover, 2 colored-light shutter means is arranged before the image frame sequential display means indicated by JP,5-34672,B, and the field sequential system electrochromatic display which has the means whose nematic mold liquid crystal good light variation study retarder is pinched among one polarizing plate which will be rich two polarizing plates is known.
[0010]
[Problem(s) to be Solved by the Invention] However, since a problem does not occur at all when human being's look is being

fixed, but these color displays are field serial modes when human being's look moves, a problem to which the color was attached arises in spite of an achromatic color because the location of the remaining color of R on a retina, G, and B signal changes.
[0011] In drawing 8 A, since the look is being fixed, the location on the retina of a white ball and a corresponding after-image in three primary colors does not change. However, if a look moves as shown in drawing 8 B, the locations of the after-image of a three-primary-colors image will differ on a retina, consequently the problem a white ball colors and appears will arise.
[0012] Moreover, as shown in drawing 8 A, even if the look is being fixed, when migration of a white ball is not followed among R, G, and B signal when migration of a white ball is quick, for example, R signal shifts from G and B signal, the locations of an after-image differ on a retina and the problem to which it seems that the edge of a white ball becomes blunt arises. these phenomena -- as the property of color breakup, and a call and this color breakup -- high -- color breakup can tend to be as seen as a brightness object. Moreover, there is a property in which color breakup can tend to be as seen as a colorless object.
[0013] Therefore, the purpose of this invention is in the color display of a field serial mode to offer the Junji Men color display equipment which can be displayed without carrying out color breakup, and the drive approach.
[0014]
[Means for Solving the Problem] Invention according to claim 1 with a color generation means to generate a three-primary-colors signal and an achromatic color signal, and the generated three-primary-colors signal and achromatic color signal, from the three-primary-colors signal inputted as the monochrome image display means It is Junji Men color display equipment which consists of a color shutter which is switched by the signal from the driving means which carries out the sequential drive of the monochrome image display means, and the outside which synchronizes with the drive of the generated three-primary-colors signal and an achromatic color signal, and is allotted to a monochrome image display means and an optical-axis top serial.
[0015] Moreover, the step at which an achromatic color signal is detected from the three-primary-colors signal into which invention according to claim 7 was inputted, The step by which a correction three-primary-colors signal is generated based on the detected achromatic color signal, The step by which the 4X Time-Division-Multiplexing signal of an achromatic color signal and a correction three-primary-colors signal is generated, It is the Junji Men drive approach of the color display equipment characterized by consisting of a step which drives the color shutter allotted to ~~a monochrome image display means by which the field is switched~~ based on a Time-Division-Multiplexing signal, and an optical-axis top serial.
[0016]
[Function] It consists of a color polarizing plate of three sheets, and a pi cel of two sheets, and the sequential drive of the monochrome image display device is carried out by R, G, B signal, and the Wht signal. Effect becomes strong from the signal of others [signal / Wht], so that the image of high brightness and an achromatic color is approached, since the level which R, G, and B signal share is used for the Wht signal. Therefore, generating of color breakup can be prevented also in the image of high brightness and an achromatic color. Furthermore, since a profile (edge) is made conspicuous by performing profile emphasis (emphasis) processing to a Wht signal, the color breakup of the edge part of a high luminance signal can be removed.
[0017]
[Example] Hereafter, one example of this invention is explained with reference to a drawing. Drawing 1 shows the block diagram of one example of the color display of the field serial mode which used the color shutter method. Moreover, drawing 2 shows an example of the signal wave form of each part of the block diagram shown in drawing 1 . R signal separated from the compound color video signal shown in drawing 2 A from an input terminal 1 is supplied, same G signal is supplied from an input terminal 2, same B signal is supplied from an input terminal 3, and a synchronizing signal Sync is further supplied from an input terminal 4. In addition, in drawing 2 A, since it is easy, illustration of a carrier chrominance signal is omitted. Such R and G, and B signal are digitized by the A/D converter which is not illustrated.
[0018] R signal supplied from the input terminal 1 is supplied to the minimum value detector 5 and a subtractor 6. Similarly, G signal is supplied to the minimum value detector 5 and a subtractor 7, and B signal is supplied to the minimum value detector 5 and a subtractor 8. In the minimum value detector 5, the minimum value in R and G which were inputted, and B signal is detected, and the detected minimum value is supplied to subtractors 6, 7, and 8 and the 4X digital disposal circuit 9 as a Wht signal. By the additive mixture of colors mentioned above, since an achromatic color signal can be acquired by using R of the same level, G, and B signal, in this example, the minimum value in the level which a three-primary-colors signal shares, i.e., R and G, and B signal is detected, and that minimum value is supplied to the 4X digital disposal circuit 9 from the minimum value detector 5 as a Wht signal. This minimum value detector 5 detects the chrominance signal of the minimum value for R signal, G signal and G signal, B signal and B signal, and R signal based on a comparison result as compared with every [which was digitized, for example] 1 pixel (one sample).
[0019] In a subtractor 6, as a result of subtracting a Wht signal from R signal, R'signal (correction R signal) is supplied to the 4X digital disposal circuit 9. Similarly, with a subtractor 7, as a result of subtracting a Wht signal from G signal, G'signal (correction G signal) is supplied to the 4X digital disposal circuit 9, and with a subtractor 8, as a result of subtracting a Wht signal from B signal, B'signal (correction B signal) is supplied to the 4X digital disposal circuit 9. When 6 [V] and B signal set [R signal / 5 [V] and G signal] each digitized pixel value to 4 [V] as an example here, it sets to the minimum value detector 5. 4 [V] is detected as the minimum value and, as for 0 [V] and the minimum value, i.e., a Wht signal, a 2[V] B'signal is supplied [R'signal] for a 1[V] G'signal to the 4X digital disposal circuit 9 as 4 [V].

[0020] The 4X digital disposal circuit 9 has a field memory 10, compresses the time-axis of each signal to one fourth, and performs Time Division Multiplexing of the correction three-primary-colors signal (R', G', B'signal) and achromatic color signal (Wht signal) which are supplied. That is, the 4X signal shown in drawing 2 B occurs from the 4X digital disposal circuit 9. This 4X signal is supplied to CRT display 11 and a synchronizing separator circuit 12. In a synchronizing separator circuit 12, the synchronizing signal separated from the supplied 4X signal is supplied to a deflection circuit 13 and the LCS drive circuit 14.
[0021] In a deflection circuit 13, based on the supplied synchronizing signal, the deviation of CRT display 11 is performed and an image is displayed on CRT display 11, i.e., monochrome display. Each of a horizontal and a vertical deflection frequency is made into 4 times of the usual thing, and a sequential indication of the image by the Wht signal, R'signal, G'signal, and B'signal is given [in 1 field]. In the LCS drive circuit 14, the pi cel 16 and the timing of a drive of 18 are generated using the supplied synchronizing signal.
[0022] The drive pulse LCS 1 from the LCS drive circuit 14 is supplied to the pi cel 16, and the drive pulse LCS 2 is supplied to the pi cel 18. Drawing 2 C shows the timing chart of the drive pulse LCS 1, and drawing 2 D shows the timing chart of the drive pulse LCS 2. These pi cels 16 and 18 have the same function as the pi cels 52 and 54 mentioned above. The pi cels 16 and 18 turn on in each high-level period of the drive pulses LCS1 and LCS2, and the pi cels 16 and 18 are turned off in the period of a low level.
[0023] Here, explanation of the color polarizing plates 15, 17, and 19 of three sheets arranged on the optical-axis top serial of CRT display 11 and the pi cels 16 and 18 of two sheets is explained using drawing 3 . When taking out a Wht signal (achromatic color signal), colored light is supplied to the color polarizing plate 15 from CRT display 11, as for the axis of ordinate of the color polarizing plate 15, R, G, and B signal are passed, and, as for an axis of abscissa, R signal is supplied to the pi cel 16. In the pi cel 16, the drive pulse LCS 1 (ON) is supplied from the LCS drive circuit 14, and the color polarizing plate 17 is supplied according to the drive pulse LCS 1 (ON), without the supplied signal changing each condition.
[0024] The axis of ordinate of the color polarizing plate 17 passes R, G, and B signal, and in order for an axis of abscissa to pass B signal, R of an axis of ordinate, G, and B signal are supplied to the pi cel 18 from each supplied signal. In the pi cel 18, the drive pulse LCS 2 from the LCS drive circuit 14 (ON) is supplied, and the color polarizing plate 19 is supplied according to the drive pulse LCS 2 (ON), without the supplied signal changing each condition. The axis of ordinate of the color polarizing plate 19 passes R, G, and B signal, without R of an axis of ordinate, G, and B signal changing each condition from each supplied signal, it is outputted and an axis of abscissa is displayed, in order to pass G signal. That is, a Wht signal (achromatic color signal) can be acquired when the pi cels 16 and 18 will be in ON condition. Similarly, each signal of R, G, B signal, and a Wht signal can be alternatively acquired by setting pi cel of two sheets to ON (0-degree rotation) and/or OFF (90-degree rotation).
[0025] When ON and the drive pulse LCS 2 are ON in the drive pulse LCS 1, a Wht signal is outputted, when OFF and the drive pulse LCS 2 are ON in the drive pulse LCS 1, R signal is outputted, when ON and the drive pulse LCS 2 are OFF in the drive pulse LCS 1, G signal is outputted, and B signal is outputted when OFF and the drive pulse LCS 2 are OFF in the drive pulse LCS 1. That is, it consists of color polarizing plates 15 and 17 of three sheets, and pi cels 16 and 18 of 19 or 2 sheets. Thus, since the effect of a Wht signal becomes the strongest when displaying the image of high brightness and an achromatic color in order to make into a Wht signal (achromatic color signal) level which R, G, and B signal (three-primary-colors signal) share, the cause of color breakup can be removed.
[0026] Here, drawing 4 shows the detailed block diagram of an example of the 4X digital disposal circuit 9 of this invention. The Wht signal which B'signal which G'signal which R'signal supplied from an input terminal 21 is supplied to a field memory 26, and is supplied from an input terminal 22 is supplied to a field memory 27, and is supplied from an input terminal 23 is supplied to a field memory 28, and is further supplied from an input terminal 24 is supplied to a field memory 29. The synchronizing signal Sync supplied from an input terminal 25 is supplied to the write-in control circuit 30 and the clock generation circuit 32. This synchronizing signal Sync is a composite synchronizing signal including a Horizontal Synchronizing signal and a Vertical Synchronizing signal.
[0027] In the clock generation circuit 32, a clock signal is generated based on a synchronizing signal Sync, and the generated clock signal is read with the write-in control circuit 30, and is supplied to a control circuit 31. In the write-in control circuit 30, it is generated from the synchronizing signal Sync and clock signal with which the write-in signal for memorizing to memory the signal supplied to each field memory was supplied, and each field memory is supplied. In the field memories 26, 27, 28, and 29 to which this write-in signal was supplied, each supplied signal is memorized for every field. By being read corresponding to the read-out signal supplied from the read-out control circuit 31, and being chosen in a switch 33, time-division multiplexing is made and each signal memorized by each field memory is taken out from an output terminal 34.
[0028] As an example, the frequency of a read-out clock signal is made into 4 times to the frequency of a write-in clock signal. A time-axis is compressed into one fourth by this, and a 4X signal as shown in drawing 2 B is taken out from an output terminal 34. Moreover, a selection signal and a synchronizing signal are outputted from the read-out control circuit 31. A selection signal is used as a change-over signal of a switch 33, and is further taken out from an output terminal 35 as signals, such as field discernment or an LCS drive. Moreover, the synchronizing signal outputted from the read-out control circuit 31 is taken out from an output terminal 36 as a composite synchronizing signal for driving the deflecting system of a CRT display.
[0029] The block diagram showing other examples of the color display of a field serial mode using the color shutter method of this invention here is shown in drawing 5 . This drawing 5 shows the block diagram from the input of R, G, and B signal to

the 4X digital disposal circuit 9, and after that 4X digital disposal circuit 9, since it becomes the same configuration as the block diagram of drawing 1 , it omits. Since gamma amendment has already been performed, digitized R signal which was supplied from the input terminal 1 is supplied to the reverse gamma correction circuit 41, and it is changed into the signal before gamma amendment is performed. Digitized B signal which digitized G signal which was similarly supplied from the input terminal 2 was supplied to the reverse gamma correction circuit 42, and was supplied from the input terminal 3 is supplied to the reverse gamma correction circuit 43.

[0030] gamma amendment is canceled in the reverse gamma correction circuit 41 to which R signal was supplied. Similarly, gamma amendment is canceled in the reverse gamma correction circuit 42 to which G signal was supplied, and gamma amendment is canceled in the reverse gamma correction circuit 43 to which B signal was supplied. The minimum value in R and G by which gamma amendment was canceled, and B signal is detected, and the chrominance signal of the minimum value is detected in the minimum value detector 5 based on a comparison result as compared with every [by which this minimum value detector 5 was digitized, for example] 1 pixel (one sample) in R signal, G signal and G signal, B signal and B signal, and R signal. The detected minimum value is supplied to an emphasizer 45 and one selected terminal of a switch 46 as a Wht signal like the example mentioned above. in an emphasizer 45, profile emphasis (emphasis) processing in which a profile (edge) is emphasized to the supplied Wht signal should do -- the selected terminal of another side of a switch 46 is supplied.

[0031] In brightness detection / motion detector 44, only when the intensity level which brightness detection was performed first and showed the value higher than the set-up threshold is detected as high brightness and detected with high brightness, motion detection is performed. the motion detection performed in this brightness detection / motion detector 44 -- between the fields -- difference -- it is detected from the amount of lost motion, and control of a switch 46 is made based on that amount of motions. That is, when a switch 46 transmits a Wht signal, it is chosen whether the Wht signal with which emphasis processing was made is transmitted. And a Wht signal is supplied to subtractors 6, 7, and 8 and a gamma correction circuit 50 through the selection terminal of a switch 46.

[0032] In a subtractor 6, as a result of subtracting a Wht signal from R signal with which gamma amendment was canceled, R'signal (correction R signal) is generated and the R'signal is supplied to a gamma correction circuit 47. And in a gamma correction circuit 47, after gamma amendment is performed to R'signal, the 4X digital disposal circuit 9 is supplied. Similarly, with a subtractor 7, as a result of subtracting a Wht signal from G signal with which gamma amendment was canceled, G'signal (correction G signal) is generated and the G'signal is supplied to a gamma correction circuit 48. And in a gamma correction circuit 48, after gamma amendment is performed to G'signal, the 4X digital disposal circuit 9 is supplied.

[0033] Furthermore, in a subtractor 8, as a result of subtracting a Wht signal from B signal with which gamma amendment was canceled, B'signal (correction B signal) is generated and the B'signal is supplied to a gamma correction circuit 49. And in a gamma correction circuit 49, after gamma amendment is performed to B'signal, the 4X digital disposal circuit 9 is supplied. Moreover, the Wht signal supplied to the gamma correction circuit 50 is supplied to the 4X digital disposal circuit 9, after gamma amendment is performed. Based on the Sync signal supplied from an input terminal 4 as this 4X digital disposal circuit 9 was shown in drawing 1, processing of R'signal, G'signal, B'signal, and a Wht signal is performed.

[0034] In the case of a white ball when other examples are used, as shown in drawing 8 , minimum value detection is performed, and if the minimum value (Wht signal) detected from each R, G, and B signal is subtracted, about the inside of a white ball, a subtraction result must be set to 0 for the same level. However, when migration of a white ball is quick, since the difference of the minimum value, and R, G and B signal is not especially set to 0 in an edge part, color breakup occurs in the part of an edge. In order to prevent this color breakup, in an emphasizer 45, the emphasis processing for profile emphasis is made to a Wht signal. Furthermore, the effectiveness that processing each R, G, and whose B signal are band limits was carried out can be acquired by subtracting each R, G, and B signal using the Wht signal with which emphasis processing was made. That is, the effectiveness an edge becomes blunt can be acquired by subtracting a Wht signal from R, G, and B signal. The color breakup in an above-mentioned edge part stops being conspicuous with this.

[0035] Moreover, according to human being's vision property, when a white ball as shown in drawing 8 moves, the provincial accent of an edge cannot be recognized, and when migration of a white ball is very slow, also when migration of a white ball is still very quicker, the provincial accent of an edge cannot be recognized. Therefore, it is judged whether according to human being's vision property, the amount of motions which can recognize the provincial accent of an edge detects whether it is no, and the motion detection used in this example performs emphasis processing.

[0036] Here, although the CRT display is used for field sequential color display equipment in this example, it is also possible to use other monochrome pixel displays, such as LCD (Liquid CrystalDisplay), instead of a CRT display.

[0037] Moreover, when LCD is used, it is also possible to make it the configuration which arranges a color polarizing plate and pi cel between a back light and liquid crystal.

[0038] Furthermore, although R', G', and B'signal (correction three-primary-colors signal) and a Wht signal (achromatic color signal) are generated by detecting the minimum value in this example, even if it uses maximum instead of the minimum value, it is satisfactory in any way.

[0039]

[Effect of the Invention] If it depends on this invention, since the effect of the Wht signal which consists of shared level of R, G, and B signal in the 4 fields of R, G, B signal (three-primary-colors signal), and a Wht signal (achromatic color signal) to the image of the high brightness which color breakup had generated most conventionally in the color display of the field serial mode which constitutes one frame, and an achromatic color will become the strongest, the cause of color breakup can be removed.

[0040] Furthermore, if it depends on this invention, an edge is obscured by restricting the frequency band of R, G, and B signal, and since an edge is made conspicuous by performing emphasis processing to a Wht signal, the color breakup generated in the edge parts of high brightness and an achromatic color can be removed.

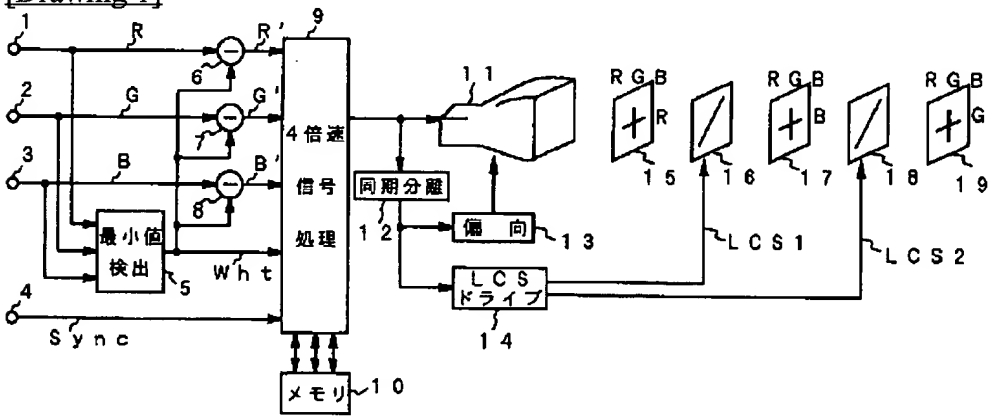
[Translation done.]

* NOTICES *

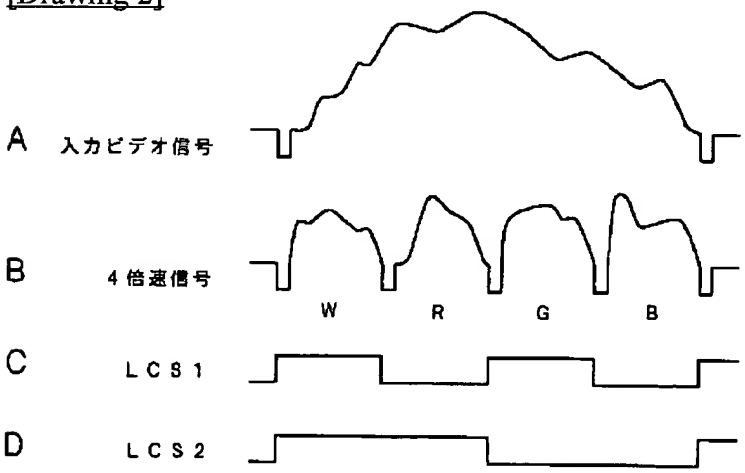
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]



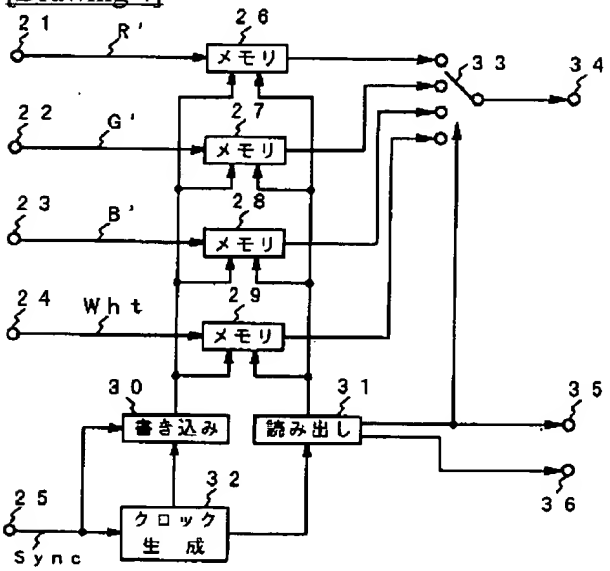
[Drawing 2]



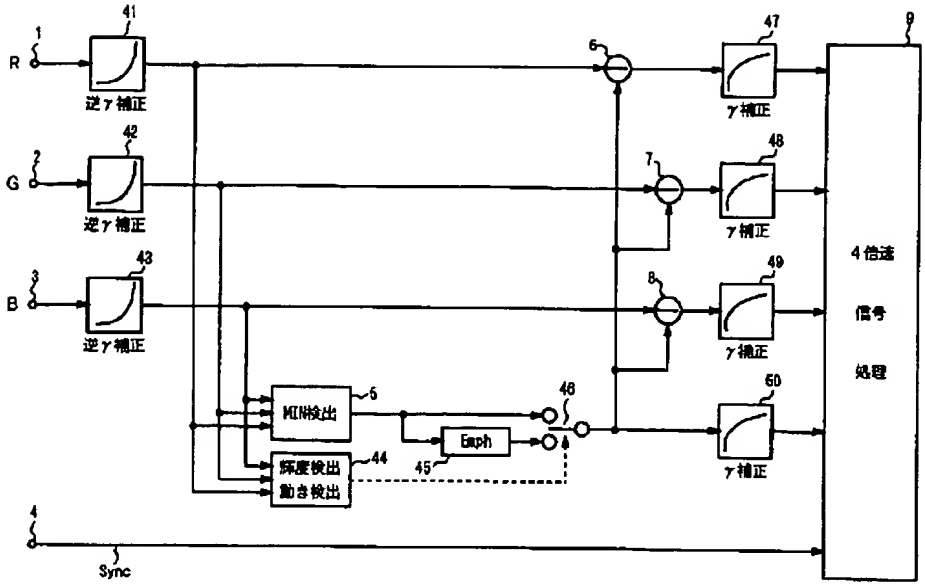
[Drawing 3]

	ｱセル１６の出力	ｱセル１８の出力	表示
W	RGB R	RGB	RGB
	(ON)	(ON)	
R	R RGB	R B	R
	(OFF)	(ON)	
G	RGB R	RGB	G
	(ON)	(OFF)	
B	R RGB	B R	B
	(OFF)	(OFF)	

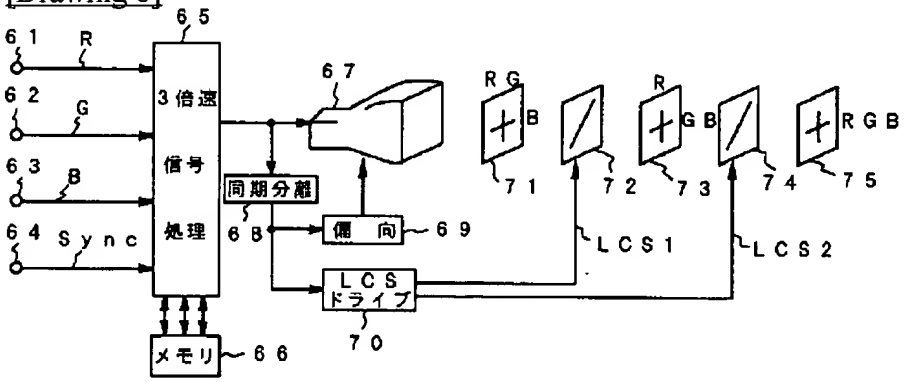
[Drawing 4]



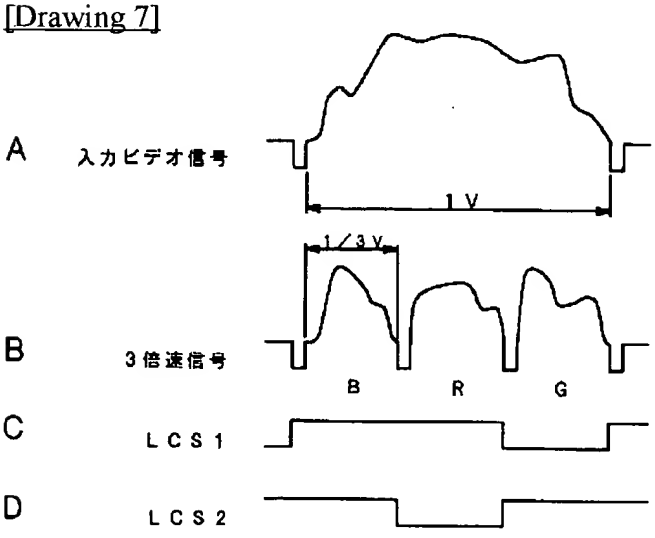
[Drawing 5]



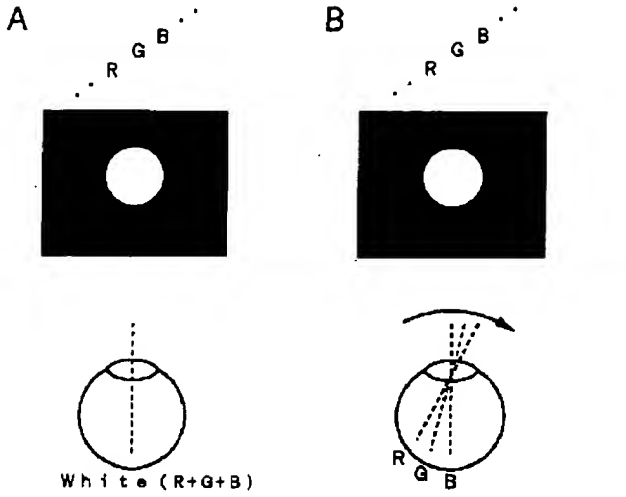
[Drawing 6]



[Drawing 7]



[Drawing 8]



[Translation done.]